

The Mediating Role of Job Satisfaction in the Relationship between Person-Environment Fit, Organizational Commitment, and Turnover Intention: An Empirical Study of Foshan Ceramic Enterprises

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Abstract

This research examines the formation mechanism of turnover intention among employees in Foshan's ceramic enterprises, grounded in the integrated theoretical framework of Conservation of Resources (COR) Theory and the Job Demands-Resources (JD-R) Model. A survey was administered to 328 frontline workers and managers, with data analysed using SmartPLS-SEM. The findings indicate that: (1) Person-Environment (PE) fit ($\beta = -0.38$, $p < 0.01$) and organisational commitment ($\beta = -0.42$, $p < 0.01$) serve as significant negative predictors of turnover intention; (2) Job satisfaction partially mediates the relationship between PE fit and turnover intention (VAF = 56.3%); (3) Job satisfaction fully mediates the relationship between organisational commitment and turnover intention (VAF = 61.7%). Multi-group analysis further revealed that environmental values alignment, a context-specific dimension of PE fit, exerted a stronger effect for younger employees ($\beta_{\text{young}} = -0.45$ versus $\beta_{\text{old}} = -0.29$, $p < 0.05$). Practical recommendations include implementing structured mentor-apprentice programmes and dynamic health subsidies to enhance organisational commitment and job satisfaction. This study contributes an integrated, context-specific theoretical framework for understanding and mitigating turnover in manufacturing industries undergoing green and technological transitions.

Keywords: Turnover Intention, Person-Environment Fit, Organisational Commitment, Job Satisfaction, Ceramic Industry, Conservation of Resources Theory

Introduction

Research Background and Significance

Foshan represents the epicentre of China's ceramic industry, accounting for over 60% of the nation's architectural ceramic production, with an annual output exceeding RMB 200 billion (Foshan Ceramic Association, 2023). As a cornerstone of regional economic stability and a key contributor to national industrial strategy, the sector's sustainability is of critical importance.

However, it currently confronts a severe human resource crisis, with an average employee turnover rate of 25% in 2023, a figure that substantially surpasses the 15% average observed in the broader manufacturing sector (Foshan Human Resources Bureau, 2023). This high turnover not only threatens productivity and technological innovation but also undermines the sector's capacity to achieve green and digital transformation under national strategic goals.

Problem Statement

The elevated turnover stems from three synergistic and escalating pressures: (1) Arduous physical working conditions, including prolonged exposure to extreme environments such as kiln temperatures exceeding 45°C, which lead to accelerated physical depletion.

(2) Acute skill mismatches attributable to rapid green technology upgrades and digital transformation mandated by China's "dual-carbon" policy.

(3) Profound generational clashes, as 68% of the workforce comprises post-90s employees who report diminished tolerance for traditional management practices and exhibit elevated expectations for workplace well-being, ethical alignment, and environmental values (Twenge, 2010).

The convergence of these challenges underscores an urgent and understudied need for targeted human resource strategies that can enhance employee retention and foster a sustainable competitive advantage.

Research Gap

Existing research exhibits three critical lacunae that this study seeks to address:

First, there remains a limited scholarly focus on manufacturing-specific dimensions of Person-Environment (PE) fit. Crucial factors such as physical demand adaptability—exemplified by heat tolerance and resilience in high-stress industrial settings—are frequently overlooked in favour of psychological and cultural measures (Ng & McGinnis Johnson, 2015).

Second, while organisational commitment is recognised as a key antecedent to turnover intention, the mediating mechanisms underlying this relationship are insufficiently explored empirically. Job satisfaction represents a prime candidate mediator within this chain, yet its role within high-attrition manufacturing contexts remains ambiguous and warrants deeper investigation (Bakker & Demerouti, 2017).

Third, and most pertinent to contemporary industrial policy, is the neglect of "environmental values" as a pivotal component of PE fit, particularly within the unique context of Chinese manufacturing's green transition. As companies strive to meet decarbonisation targets, employees' alignment with organisational sustainability missions has emerged as a critical yet under-theorised factor influencing retention.

Research Objectives and Practical Implications

To address these interconnected gaps, this research integrates Conservation of Resources (COR) Theory (Hobfoll, 1989) and the Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2017) to construct a novel and holistic framework. This model examines how both traditional and novel dimensions of PE fit—including physical and environmental value fit—

along with organisational commitment, influence turnover intention, both directly and indirectly through the mediating pathway of job satisfaction.

By situating this investigation within Foshan's ceramic industry, this study not only aims to generate context-specific insights but also offers a replicable model for other manufacturing sectors undergoing similar technological and generational transitions. The findings are anticipated to provide actionable guidance for organisational managers, policy makers, and industry associations seeking to mitigate turnover rates, enhance employee well-being, and support the sustainable evolution of China's foundational manufacturing industries.

Theoretical Framework and Hypotheses

Integrated Theoretical Foundation

This research is underpinned by the integrated perspectives of Conservation of Resources (COR) Theory and the Job Demands-Resources (JD-R) Model. COR Theory (Hobfoll, 1989) posits that individuals strive to obtain, retain, and protect their valued resources (e.g., energy, personal beliefs, supportive relationships). Stress and negative outcomes such as turnover intention eventuate when these resources are threatened, lost, or when investments fail to yield resource gains.

The JD-R Model (Bakker & Demerouti, 2017) complements this by categorising workplace factors into job demands (physical, psychological, or social aspects that necessitate sustained effort) and job resources (aspects that mitigate demands, facilitate goal achievement, or stimulate growth). We conceptually map these two theories onto our research context (Figure 1): Job Demands (e.g., extreme heat, skill-upgrading pressure) pose a threat of resource depletion (e.g., physical energy, sense of competence). Conversely, Job Resources (e.g., high PE Fit, robust Organisational Commitment) facilitate resource acquisition (e.g., personal well-being, sense of belonging) and function as buffers against resource depletion. This integrated framework provides a robust mechanism to explicate how the resource caravan (comprising PE Fit and Commitment) safeguards against resource depletion engendered by job demands, ultimately attenuating the intention to leave (turnover intention) by fostering a key indicator of resource abundance: job satisfaction.

This model integrates Conservation of Resources (COR) Theory (Hobfoll, 1989) and Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2017). Job Demands pose a threat of resource loss, leading to negative outcomes like turnover intention. Conversely, Job Resources facilitate resource gain, leading to positive outcomes like job satisfaction, which in turn reduces turnover intention.



Figure 1. The Integrated Theoretical Research Model

Hypotheses Development

PE Fit and Turnover Intention

We conceptualise PE Fit in this context as the congruence between an employee's personal characteristics (abilities, values) and the specific demands and culture of the ceramic manufacturing environment. Beyond traditional dimensions (Cable & DeRue, 2002; Kristof-Brown et al., 2005), we incorporate "heat adaptability" (capacity to cope with high-temperature environments) and "environmental values alignment" (the congruence between an employee's personal emphasis on environmental protection and the company's green practices and ethos). Consistent with COR theory, a high degree of PE Fit constitutes a crucial job resource. It diminishes the effort required to cope with job demands (e.g., a heat-adapted worker expends less physiological energy), thereby conserving resources. This conservation of resources attenuates the fundamental impetus to withdraw from the stressful environment, thus directly reducing turnover intention.

H1: PE fit is negatively related to turnover intention.

Organisational Commitment and Turnover Intention

Organisational commitment, particularly affective commitment (emotional attachment), constitutes a significant accumulated resource (Meyer & Allen, 1991). Employees with elevated commitment have invested their identity and emotions into the organisation. Departure would constitute a substantial resource loss. According to COR theory, individuals are motivated to protect such invested resources. Consequently, highly committed employees are less inclined to consider leaving, as it would jeopardise their stored resource investment.

H2: Organisational commitment is negatively related to turnover intention.

PE Fit, Organisational Commitment, and Job Satisfaction

Job satisfaction represents a positive emotional state resulting from the appraisal of one's job experiences (Bowling & Hammond, 2008). From the JD-R perspective, both PE Fit and Organisational Commitment represent potent job resources. PE Fit (e.g., perceiving that one's values are shared) fulfils psychological needs, while Organisational Commitment provides a sense of security and belonging. COR theory frames this as a process of resource gain: these resources foster positive appraisals of one's job, culminating in enhanced job satisfaction.

H3: PE fit is positively related to job satisfaction.

H4: Organisational commitment is positively related to job satisfaction.

The Mediating Role of Job Satisfaction

We propose that job satisfaction functions not merely as an outcome but as a critical mediating mechanism that translates the possession of resources (PE Fit, Commitment) into the intention to remain. While PE Fit may exert a direct conserving effect on withdrawal intentions (H1), it also operates indirectly by building a reservoir of positive affect (satisfaction) that renders departure less desirable. For organisational commitment, which constitutes a deeper, more stable affective state (Meyer & Allen, 1991), its influence on the behavioural intention to leave may be almost entirely channelled through the more immediate and evaluative state of job satisfaction (Tett & Meyer, 1993). In COR terms, satisfaction represents the experienced state of resource abundance that renders the prospect of incurring the losses associated with turnover untenable.

H5: Job satisfaction mediates the relationship between PE fit and turnover intention.

H6: Job satisfaction mediates the relationship between organisational commitment and turnover intention.

Conceptual Model

Conceptual model showing the relationships between independent variables, mediating variable, and dependent variable.



Figure 2. The Conceptual Model

Research Hypotheses:

H1: PE Fit is negatively related to Turnover Intention

H2: Organizational Commitment is negatively related to Turnover Intention

H3: PE Fit is positively related to Job Satisfaction

H4: Organizational Commitment is positively related to Job Satisfaction

H5: Job Satisfaction mediates the relationship between PE Fit and Turnover Intention

H6: Job Satisfaction mediates the relationship between Organizational Commitment and Turnover Intention

Research Methodology

Sample and Data Collection

A stratified random sampling methodology was employed across three large ceramic enterprises in Foshan to ensure representation across diverse job functions (production, technical, administrative). Data were collected via anonymous questionnaires administered on-site with managerial support. Of 400 questionnaires distributed, 350 were returned. After

eliminating 22 responses due to incomplete data or straight-line responding, 328 valid responses were retained (effective response rate: 82%).

Table 1. Sample Demographic Characteristics (N=328)

Demographic	Category	Frequency	Percentage
Gender	Male	217	66.2%
	Female	111	33.8%
Age	<25 years	89	27.1%
	26-35 years	134	40.9%
	36-45 years	78	23.8%
	>45 years	27	8.2%
Education	High School or below	195	59.5%
	College/Associate	105	32.0%
	Bachelor's or above	28	8.5%
Position	Frontline Worker	253	77.1%
	Technician/Supervisor	48	14.6%
	Manager/Admin	27	8.2%
Tenure	<1 year	98	29.9%
	1-5 years	164	50.0%
	>5 years	66	20.1%

Measures

All constructs were measured using well-established 5-point Likert scales (1 = strongly disagree, 5 = strongly agree). All scales were translated into Chinese employing a rigorous back-translation procedure to ensure conceptual equivalence and were pre-tested with a small cohort of workers for clarity and contextual appropriateness.

PE Fit: Adapted from Cable and DeRue's (2002) scale. Two context-specific dimensions were incorporated: three items measuring "heat adaptability" (e.g., "I can comfortably cope with the high temperatures in my work area") and four items assessing "environmental values alignment" (e.g., "My personal values regarding environmental protection are a good fit with my company's green initiatives"). Sample items from the original scale include: "The things that I value in life are very similar to the things that my organization values" and "My personal values match my organization's values and culture." ($\alpha = 0.87$).

Organisational Commitment: Measured using the 6-item affective commitment subscale from Meyer and Allen's (1991) scale (e.g., "I would be very happy to spend the rest of my career in this company"). ($\alpha = 0.91$).

Job Satisfaction: Measured using the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS), a 3-item global job satisfaction measure (Cammann et al., 1983; Bowling & Hammond, 2008). ($\alpha = 0.89$).

Turnover Intention: Measured using a 3-item scale from Cammann et al. (1983) (e.g., "I often think about quitting my job"). ($\alpha = 0.85$).

Control Variables: Based on prior literature, age, gender, education, and organisational tenure were included as control variables in the structural model to isolate the net effects of the principal constructs.

Data Analysis

The analysis was conducted in two phases using SPSS 26.0 and SmartPLS 4.0.

Preliminary Analysis: Descriptive statistics and correlations were analysed via SPSS. Common Method Bias (CMB) was assessed using Harman's single-factor test. The unrotated factor solution revealed that the first factor accounted for 38.7% of the variance, below the 50% threshold, indicating that CMB did not constitute a critical issue.

PLS-SEM Analysis: SmartPLS was selected owing to its capacity to model latent constructs and test complex mediation models with high predictive power. The analysis adhered to a two-step approach: (a) assessment of the measurement model (reliability, convergent and discriminant validity); (b) assessment of the structural model (path coefficients, effect sizes f^2 , predictive relevance Q^2 , and mediation analysis via bootstrapping with 5,000 subsamples).

Results

Measurement Model

The measurement model demonstrated excellent reliability and validity. All factor loadings exceeded 0.7. Composite Reliability (CR) values ranged from 0.88 to 0.93, surpassing the 0.7 threshold. Average Variance Extracted (AVE) values ranged from 0.65 to 0.77, exceeding the 0.5 benchmark. For discriminant validity, the square root of the AVE for each construct (diagonal values) was greater than its correlations with other constructs, and all HTMT ratios were below 0.85, confirming discriminant validity.

Structural Model and Hypothesis Testing

After incorporating control variables (which exhibited no significant effects on the endogenous variables), the structural model was evaluated. The results support all six hypotheses (H1-H6).

Table 2. Hypothesis Testing Results (Path Coefficients)

Hypothesis	Path	β Coefficient	t-value	95% CI	Conclusion
H1	PE Fit -> Turnover Intention	-0.38	5.92	[-0.49, -0.28]	supported
H2	Commitment -> Turnover Intention	-0.42	6.31	[-0.53, -0.32]	supported
H3	PE Fit -> Job Satisfaction	0.51	7.25	[0.40, 0.62]	supported
H4	Commitment -> Job Satisfaction	0.57	8.03	[0.46, 0.68]	supported
H5	PE Fit -> Sat. -> Turnover	-0.32 (Indirect)	5.18	[-0.41, -0.24]	Partial Mediation (VAF=56.3%)
H6	Commitment -> Sat. -> Turnover	-0.36 (Indirect)	6.22	[-0.45, -0.28]	Full Mediation (VAF=61.7%)

Note: The direct effect of Organisational Commitment on Turnover Intention became non-significant ($\beta = -0.06$, $p > 0.05$) when the mediator (Job Satisfaction) was incorporated, confirming full mediation for H6.

Additional Analysis: The Role of Age

A multi-group analysis (MGA) was conducted to compare employees born after 1990 (n=184) with older employees (n=144). The results confirmed that the negative effect of environmental values alignment (a sub-dimension of PE Fit) on turnover intention was significantly stronger ($p < 0.05$) for the post-90s cohort ($\beta_{\text{young}} = -0.45$ vs. $\beta_{\text{old}} = -0.29$), substantiating the proposition that value-based fit constitutes a more critical resource for retaining younger generations.

Discussion

Key Findings

This study validates an integrated COR/JD-R model for predicting turnover intention. The findings confirm that both PE Fit (H1) and Organisational Commitment (H2) represent critical resources that directly reduce turnover intention. More significantly, job satisfaction plays a pivotal mediating role. It functions as a partial mediator for the PE Fit-Turnover relationship (H5) and a full mediator for the Commitment-Turnover relationship (H6). This differential mediation constitutes a key insight: while PE Fit exerts both a direct, perhaps more utilitarian, effect on reducing withdrawal (e.g., "This job is physically tolerable for me"), its effect is also channelled through satisfaction. Conversely, the influence of the deeper emotional bond of commitment operates almost exclusively by enhancing daily satisfaction (e.g., "I feel good about working here, therefore I do not think about leaving").

The salience of environmental values alignment for younger workers underscores the evolving nature of "resources" in the workplace. For the post-90s generation, employment at a company that aligns with their socio-environmental values constitutes a significant psychological resource, the absence of which can trigger resource depletion and turnover intentions.

Theoretical Contributions

This study makes several key contributions:

1. *Contextualises PE Fit*: It transcends generic constructs by operationalising and validating "heat adaptability" and "environmental values alignment" as critical, context-specific dimensions of PE Fit for green-transitioning manufacturing industries.
2. *Clarifies Mediation Mechanisms*: It provides empirical clarity regarding the distinct mediating pathways through which PE Fit and Commitment operate, resolving ambiguity in prior literature. It demonstrates that commitment's effect on turnover is fully channelled through the affective state of job satisfaction.
3. *Theoretical Integration*: It offers a novel integration of COR Theory and the JD-R Model, providing a robust, mechanism-based framework for comprehending employee turnover as a process of resource evaluation, gain, and loss.

Practical Implications

1. *Recruitment*: Revise hiring practices to incorporate practical heat tolerance tests and situational interview questions designed to assess alignment with environmental values.
2. *Retention*: Implement structured mentor-apprentice programmes (e.g., offering RMB 3,000 bonuses to skilled workers who successfully train new hires) to build social resources and commitment. Introduce dynamic health subsidies that are adjusted based on local PM2.5 levels and summer heat indexes to compensate for physical resource depletion.

3. *Policy Advocacy*: Actively collaborate with local governments and industry associations to design and fund green skills training programmes (e.g., advocating for subsidies of RMB 2,000 per employee trained) to reduce the resource drain caused by skill mismatches.

Limitations and Future Research

1. *Cross-Sectional Design*: While revealing associations, causality cannot be definitively asserted. Future research should employ longitudinal designs to track how changes in PE Fit and commitment influence satisfaction and turnover intentions over time, particularly following the implementation of recommended interventions.

2. *Geographical Specificity*: The focus on Foshan, while a strength in terms of depth, may constrain generalisability. Future studies should test this model in other manufacturing hubs (e.g., Jingdezhen for ceramics) or other polluting industries undergoing green transitions (e.g., steel, chemicals) to assess its broader validity.

3. *Self-Reported Data*: Despite statistical checks, biases inherent to self-reports persist. Future research should incorporate objective measures, such as IoT sensors to monitor environmental stressors (temperature, air quality) in real-time, and actual turnover data to validate the intention-behaviour link.

Conclusion

This study demonstrates that within the challenging context of Foshan's ceramic industry, employees' intentions to leave are profoundly shaped by their fit with the environment and their commitment to the organisation, primarily through the mechanism of job satisfaction. The research highlights that for the contemporary workforce, particularly younger employees, a values-based fit constitutes an increasingly critical resource. By adopting targeted HR practices that build resources and mitigate demands, ceramic enterprises can more effectively navigate the dual challenges of talent retention and the achievement of a sustainable green transition.

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